

CLAIMS

5 1. a Process for the preparation of doped pentasil-type zeolite comprising the
steps of:

10 a) preparing an aqueous precursor mixture comprising a silicon source, an
aluminum source, doped faujasite seeds, and another type of seeding
material, and

15 b) thermally treating the precursor mixture to form a doped pentasil-type
zeolite.

2. The process of claim 1 wherein the doped pentasil-type zeolite is doped
ZSM-5.

15 3. The process of claim 1 wherein the other type of seeding material comprises
pentasil-type seeds.

20 4. The process of claim 1 wherein the other type of seeding material is a sol or
gel containing an organic directing template.

25 5. The process of claim 1 wherein the faujasite seeds are doped with a dopant
selected from the group consisting of Ce, La, Mn, Fe, Ti, Zr, Cu, Ni, Zn, Mo,
W, V, Sn, Pt, Pd, Ga, B, and P.

6. The process of claim 1 wherein the silicon source is selected from the group
consisting of sodium silicate, sodium meta-silicate, stabilized silica sols, silica

gels, polysilicic acid, tetra ethylortho silicate, fumed silicas, precipitated silicas, and mixtures thereof.

7. The process of claim 1 wherein the aluminum source is selected from the group consisting of $\text{Al}_2(\text{SO}_4)_3$, AlCl_3 , AlPO_4 , $\text{Al}_2(\text{HPO}_4)_3$, aluminum trihydrate (Al(OH)_3), thermally treated aluminum trihydrate, (pseudo)boehmite, aluminum chlorohydrol, aluminum nitrohydrol, and mixtures thereof.
- 10 8. The process of claim 1 wherein step b) is performed at a temperature in the range 150-180°C.
9. The process of claim 1 wherein step b) is performed for 3-8 hours.
- 15 10. The process of claim 1 wherein a shaping step is performed between steps a) and b).